

REPORT ON STEAM TURBINE MACHINERY.

No. 109349

4a.

Received at London Office

When handed in at Local Office **31 JAN 1941** Port of **LONDON**
 Date, First Survey **8 MAY 1940** Last Survey **19 NOVEMBER 1940**
 in Survey held at **Rugby** (Number of Visits **10**)
 on the **LLANDUDNO** Tons } Gross
 } Net
 Built at **Greenock** By whom built **Hawillai** Yard No. **J1029** When built
 Engines made at **Rugby** By whom made **British Thomson Houston Co. Ltd.** Engine No. **R 2254** When made
 Boilers made at By whom made Boiler No. When made
 Shaft Horse Power at Full Power **2000** Owners Port belonging to
 Nominal Horse Power as per Rule **359.3** Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which Vessel is intended **Minesweeping**

STEAM TURBINE ENGINES, &c.—Description of Engines

B.T.H. Impulse Turbines

No. of Turbines Ahead **2** Direct coupled, single reduction geared } to **2** propelling shafts. No. of primary pinions to each set of reduction gearing **1**
 Astern **2** Direct coupled, double reduction geared }
 Direct coupled to Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;
 supplying power for driving Direct Current Generator }
 Propelling Motors, Type
 Direct coupled, single or double reduction geared to propelling shafts.

TURBINE LOADING.	H.P.			I.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES. "	DIAMETER AT TIP. "	NO. OF ROWS.	HEIGHT OF BLADES. "	DIAMETER AT TIP. "	NO. OF ROWS.	HEIGHT OF BLADES. "	DIAMETER AT TIP. "	NO. OF ROWS.	HEIGHT OF BLADES. "	DIAMETER AT TIP. "	NO. OF ROWS.
EXPANSION	0.54	32.08	1							2.30	33.96	1
1st row	0.92	32.50	1							4.70	36.36	1
2nd row	0.63	28.82	1									
3rd row	0.81	29.18	1									
4th row	1.07	29.70	1									
5th row	1.42	30.40	1									
6th row	1.80	32.66	1									
7th row	2.63	35.32	1									
8th row	4.16	38.38	1									

Shaft Horse Power at each turbine H.P. **1000** I.P. **5000** 1st reduction wheel **360**
 I.P. **360** main shaft **360**
 L.P. **360**

Motor Shaft diameter at journals H.P. **4 1/2** Pitch Circle Diameter 1st pinion **5.326** 1st reduction wheel **73.828** Width of Face 1st reduction wheel **2 x 7**
 I.P. **4 1/2** 2nd pinion **—** main wheel **—** main wheel **—**
 L.P. **4 1/2**

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion **7 1/4** 1st reduction wheel **10 1/2**
 2nd pinion **—** main wheel **—**

Visible Pinion Shafts, diameter at bearings External 1st **4 1/2** 2nd **—** diameter at bottom of pinion teeth 1st **4.9009**
 2nd **—**

Wheel Shafts, diameter at bearings 1st **7** diameter at wheel shroud, 1st **7.503** Generator Shaft, diameter at bearings **—**
 main **—** Propelling Motor Shaft, diameter at bearings **—**

Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule **6 1/4**
 as fitted **5 builders** as fitted **5 builders** Is the tube shaft fitted with a continuous liner

Brass Liners, thickness in way of bushes as per rule Thickness between bushes as per rule Is the after end of the liner made watertight in the
 as fitted **5 builders** as fitted **5 builders**

Propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner
 the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

Two liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after end of the tube
 aft If so, state type **Edwards** Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet.
 Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbine exhaust direct to the

Condenser No. of Turbines fitted with astern wheels Feed Pumps No. and size How driven

Pumps connected to the Main Bilge Line No. and size How driven Lubricating Oil Pumps, including Spare Pump, No. and size

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 pumps, No. and size:—In Engine and Boiler Room In Pump Room

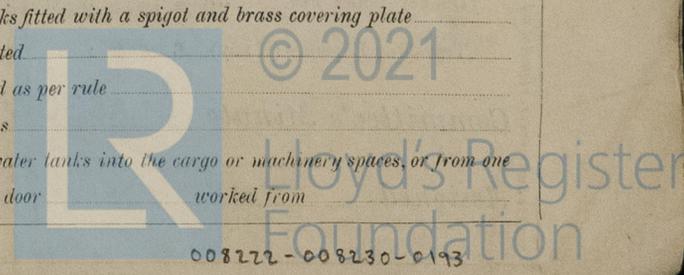
Holds, &c. Independent Power Pump Direct Suctions to the Engine Room
 Main Water Circulating Pump Direct Bilge Suctions, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-bores

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges
 Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fitted sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Overboard Discharges above or below the deep water line
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

How are they protected
 Have they been tested as per rule

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from



008222-008230-0193

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 3700 sq. ft.
 Is Forced Draft fitted Yn. No. and Description of Boilers 2 water tube Working Pressure 250 lb.

Is a Report on Main Boilers now forwarded?

Is a Donkey Boiler fitted? If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

Plans. Are approved plans forwarded herewith for Shafting Main Boilers Auxiliary Boilers Donkey Boilers
 (If not state date of approval)

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

THE BRITISH TRADING-HOUSTON CO., LTD.
 per H. Manning Manufacturer.

The foregoing is a correct description,

Dates of Examination of principal parts—Casings 31.5.40. 11.7.40. etc. Rotors 2.7.40. etc. Blading 4.7.40 etc. Gearing 31.5.40. etc.
 Dates of Survey while building { During progress of work in shops -- } 1940: MAY 8. 17. 31 June 7 20 27 4. 12 Aug 20. 21. 25. 30 Sept 11 Oct 2. 15. 25 Nov 7. 19
 { During erection on board vessel --- }
 Total No. of visits 16 (in shops)

Wheel shaft 8.5.40. etc. Thrust shaft 8.5.40. Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength S. 40.5 Tm/A Identification Mark 1365 T.D.S.

Flexible Pinion Shaft, Material and tensile strength Wellman Ribby S. 31.8 Tm/D Identification Mark 600. T.D.S.

Pinion shaft, Material and tensile strength S. Hi. Steel 47.2 Tm/D Identification Mark 1369 T.D.S.

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material S. Identification Mark 1314 T.D.S. Thrust shaft, Material S. Identification Mark 1314 T.D.S.

Intermediate shafts, Material Identification Marks Tube shaft, Material Identification Marks

Screw shaft, Material Identification Marks Steam Pipes, Material Test pressure

Date of test Is an installation fitted for burning oil fuel

Is the flash point of the oil to be used over 150°F. Have the requirements of the Rules for the use of oil as fuel been complied with

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo If so, have the requirements of the Rules been complied with

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with

Is this machinery a duplicate of a previous case Yn. If so, state name of vessel 51028.

General Remarks (State quality of workmanship, opinions as to class, &c.) This vessel's machinery has been built under survey, of best materials and in accordance with the approved plans. The material & workmanship are good. The machinery was run running coupled to a water brake, afterwards speed out & found satisfactory. Spare gear has been tried in place. The machinery has been forwarded to Port Glasgow for installation on board the vessel.

The amount of Entry Fee ... £	When applied for,
Special ... £	19
Donkey Boiler Fee ... £	When received,
Travelling Expenses (if any) ... £	19

W. J. ...
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 8 APR 1942
 Assigned SEE ACCOMPANYING MACHINERY REPORT



Certificate (if required) to be sent to ...